

Both these aberrations and many of the typical forms were successfully captured on slide film to remind me of my first visit to the quarters of our rarest resident butterfly. P. BOWLER, 9 Bakers Hill, Heage, Derbyshire DE5 2BL.

FACTORS LEADING TO A LOCAL ABUNDANCE OF EURODRYAS AURINIA ROTTEMBURG (MARSH FRITILLARY) IN WORCESTERSHIRE IN 1984 — In April 1984 larvae of *Eurodryas aurinia*, were so abundant at the only known breeding site in Worcestershire that it was impossible to walk along some of the rides in the private woodland without treading on them. The first butterflies were seen as early as May 14th. and subsequently they were in profusion. It is worth reviewing the factors which have led to this most pleasing situation, especially because, as far as I can ascertain, *aurinia* is still absent from all surrounding counties except Gloucestershire.

I reported (*Ent. Rec.* 89: 331) the re-appearance of this species in Worcestershire in 1976 after an apparent absence of 23 years. Studies during the poor summers of 1977 and 1978 showed that the colony was weak, only breeding very locally despite an abundance of *Succisa pratensis* (devil's bit scabious). 1979 saw an improvement, but with news of a planned clear felling of a large area followed by installation of deep drainage prior to replanting with conifers, it was decided to establish a captive stock. I sent some larvae to Dr. Keith Porter at Oxford University for determination of parasites, but surprisingly there were none, and subsequently he returned them all as pupae which hatched out without any losses. Work in the woods with heavy machinery devastated the observed breeding areas, so in 1980 the bred stock was released in what appeared to be the best adjacent area.

The winter of 1981 was unfavourably mild and wet, followed by a cool spring, and the first butterflies did not appear until 6th. June. However, by this time the *S. pratensis* had begun to recover well and the site was much more open. In early September an encouraging number of larval webs were found. 1982 started with a hard, cold winter which may well have been a factor in reducing the number of predators; the spring was the sunniest since 1955 and from late May there was a relatively large emergence. Indeed the summer of 1982 turned out to be the first of three successive good summers, and *aurinia* has since progressively increased in numbers. It will be interesting to see if the present hard winter will prove to be another beneficial factor.

Last year (1984), there was clear evidence of gravid females spreading into the surrounding countryside, and we are hopeful that the species may re-appear in other old haunts in the West Midlands which have escaped agricultural changes. However, if this happens, it may not be a process of natural extension. Several

cases have come to my notice of larval webs being taken without permission, and bred imagines released without reference either to the N.C.C. or the County Nature Conservation Trust. For example, a dozen or so butterflies found to the north of Evesham in 1983 were probably the result of such action, because the habitat was unsuitable and there is no *S. pratensis* in the area.

I still reflect on the origin of those butterflies which re-appeared in 1976. Had *aurinia* remained there for 23 years at low density and escaped detection until the good summers of 1973 and 1975 resulted in a build up of numbers? — or were they the consequence of a natural spread from an unknown nearby colony? — or did someone introduce them? We do not know, but we do have this excellent site for *aurinia* in Worcestershire today. Long may it continue! J. E. GREEN, 25 Knoll Lane, Poolbrook, Malvern, WR14 3JU.

DEATH'S HEAD HAWK: *ACHERONTIA ATROPOS* LINN. IN HAMPSHIRE — On 22 September 1984 two larvae of *atropos* were found in a small garden in Chilbottom, Hants. One was crawling down a garden path having been disturbed by the pulling of potato haulms. The other, much smaller, was feeding on unpulled potatoes. The larger larva, in its final instar, was bright yellow with light blue stripes, pupating on 26th September. The smaller larva, in its penultimate instar, was similarly coloured but moulted on 24th September to the rarer brown form with three bright white rings behind the head and a dark line down the centre of the back. It ceased feeding on 6th October, and went to ground.

The two large, healthy pupae were kept in the airing cupboard at about 70°C throughout the winter, but failed to emerge although they were very much alive. In May they were transferred to the kitchen — they wriggled energetically whenever light fell on them — and two fine males emerged on 20 June 1985. Although this species is known to diapause if kept in cool, frost free conditions, it is unusual to find such a prolonged pupal stage at elevated temperatures. Brig. E. L. SIMSON, 4 Plowden Park, Aston Rowant, Oxford.

DRAGONFLY EGG-LAYING HABITS: *AESHNA CYANEA* (MÜLLER) — Males of many dragonfly species participate in egg-laying, either actively as the leading partner of a tandem pair, or passively as a spectator, supervisor or protector of the female. Of some, however, the textbooks say that the female “oviposits unattended by the male”. One such is *Aeshna cyanea* (Müller), but I suspect that this male also is more responsible.

Wanting photographs of this species, I frequented Savernake Forest ponds in late summer, 1963, but found the insects too active. Then, on the warm, sunny, late afternoon on 23 August, I again visited my favourite pond. My approach was halted by the